

tion they may be able to obtain regarding food, habits or behaviour.

In the interest of scientific accuracy it would be desirable for them to state whether their information is based on personal observation, surmise, local testimony or hearsay evidence, as the case may be.

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SALIM ALI.

December 11, 1943.

XI.—NOTES ON THE EVENING FLIGHT OF GEESE AND DUCK.

At a certain fixed time before or after sunset wild fowl on a day sanctuary suddenly get off the water and fly round and round. Geese and duck may do this at the same time or at different times.

If there are no night feeding grounds attached to the sanctuary birds settle down after the evening 'roll call' as it were.

If there are night feeding grounds birds go to them either direct from 'roll call' or after an interval if they are apt to be disturbed on their feeding grounds.

The arrival at night feeding grounds is governed by the extent to which they are disturbed thereon.

Disturbance, to affect birds, has to be deliberate in the shape of shooting, netting or hawking or possibly the presence of human beings or cattle. Birds do not object to ordinary traffic in the proximity of dwellings if they are not deliberately interfered with. In Persia I have seen duck remain on water in barrow pits along the railway while trains go past. At Hygam Jheel in Kashmir duck stay all day within 20 yards of the bund and villages on the bund regardless of constant traffic: they are teal, shoveller, a few mallard, and odd pochard. I have never seen gadwall or pintail there.

Night feeding grounds are reconnoitered especially by geese and occupied if free. Shooting or even the presence of anyone on a feeding ground if persisted in makes duck leave it. Birds are very sensitive to regular disturbance but adjust their arrival to overcome it if the ground has any particular attraction. In a dak jungle near Dahbita, about 30 miles from Delhi, there is a shallow rectangle of clear water of about 5 acres literally teeming with snails. Duck and geese are always found there; and no matter when you shoot it up, you will find them back again inside half an hour.

Duck and geese leave their day sanctuary by the same route and with the punctuality of the B.B.C. news bulletins. No amount of shooting on the edges of the day sanctuary affects the time or the route of flight, but birds go over higher to avoid being shot up.

The brighter the moon the higher the flight. In snow, rain or fog, some, but not all, birds fly low.

The majority of the teal flight only a few feet above the ground preferring avenues along streams or over ground clear of trees. It has been noticed that teal crossing from Spain to Africa in a storm fly within a few feet of the waves going right down into the trough and, as it were, riding the crests.

Snow or the freezing of still water upsets and, in fact, misses the flight programme of many birds on a sanctuary, but there are some which do not change their daily flight routine. When a noise takes place you get two-way traffic instead of one way owing to the change not being adopted by all—the hour of flight is generally kept the same. Heron are even more punctual and regular in their fighting than duck and geese.

An example of persistence in fighting was that of pack after pack of geese leaving the Hokra preserve near Srinagar from about 8 a.m. till 11 a.m. over the poplar avenue on the main road from Baranulla to Srinagar. It was a common thing to see up to a dozen guns lined up blazing away at the geese going over like formations of air craft. The percentage of kills to snos fired was very low because the birds were practically out of shot and killed only by a chance pellet or brought down owing to a broken wing. Wounded birds were numerous, and there was always a collection of villagers on foot and mounted on ponies on the look out for any that fell in the distance. The reward for retrieving a bird varied with the distance. One brought in by a horseman from a mile or more cost practically the Srinagar game dealer's price. The poplar avenue having become very old and badly affected by borers has been recently cut down opposite Hokra. It will be interesting to see if the geese now go over lower or whether they will still adjust their height to something at which No. 4 shot was irritant rather than lethal.

There is no doubt many shooters are misled. By the way visibility of fighting birds varies from a large number of causes such as the height, speed of flight, amount of daylight still left, cloud, moisture or the air. It is sometimes said any bird you can see fighting is within range. This is most misleading because at one stage of the waning light you see only birds that are a good 100 yards off. Again you kill a bird thought to be a long shot only to find from the density of pellets in it that it was in reality a near shot. It is true that, if you are sitting over a small patch of feeding ground the birds you see as they aught are within shot as also are birds walked up on a feeding ground. It is possible, for instance, to get mallard in this way walking over some very favourite night haunt and taking a snap shot as the bird appears as a black spot for a moment, but this is hardly true fighting. In a true evening flight the shooter has also to take into consideration the varying size of birds, teal low down look much the same as big duck twice as high up.

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G. DE LA P. BERESFORD,

December 30, 1943.

Major General.

XII.—MOULTING OF DUCK AFTER ARRIVAL IN INDIA.

I was very interested in Miscellaneous Note No. XI in the current issue of the *Journal* (Vol. xlv, p. 300) regarding the moulting of duck after arrival in India since I also came across an instance of this some years ago at a village called Tadunia on the